

identification a data format is selected for embedding sub data into data to be recorded onto the loaded recording medium so that the data are readable as optical changes. Whether the recording area in which recording is to be performed is a recording area in which the sub data should be embedded or not is discriminated, and if the result of the discrimination indicates that the area in which recording is to be carried out is a recording area in which the sub data should be recorded, the sub data are embedded and recorded into the data to be recorded in a predetermined recording area on the recording medium on the basis of the selected data format.--

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IN THE CLAIMS

Please amend claims 1-58 and 61-86 by rewriting same to read as follows:

--1. (Amended) A recording method for a recording medium, comprising the steps of:

recording main data onto a recording medium on which an identification part indicating a type of said recording medium is provided, so that said main data are readable as optical changes; and

embedding sub data at least into a part of said main data based on a format corresponding to said type of said recording medium and recording said sub data along with said main data.

--2. (Amended) The recording method for a recording

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medium as claimed in claim 1, wherein encryption processing is performed on text data of said main data that are then recorded and said sub data are data for decoding said encryption processing performed on said text data of said main data.

A2 --3. (Amended) The recording method for a recording medium as claimed in claim 1, wherein said sub data is embedded based on a format corresponding to said type of said recording medium, at least a first format for a reproduction-only-type recording medium and a second format for a recordable-type recording medium.

--4. (Amended) The recording method for a recording medium as claimed in claim 3, wherein modulation processing is performed on said main data that are then recorded onto said recording medium and said sub data are embedded into margin bits of said modulation-processed main data.

--5. (Amended) The recording method for a recording medium as claimed in claim 3, wherein modulation processing is performed on said main data that are then recorded onto said recording medium and said sub data are embedded into said main data so as to satisfy a connection condition due to said modulation processing performed on said main data.

--6. (Amended) The recording method for a recording

medium as claimed in claim 4, wherein said sub data are embedded into a predetermined pattern portion of said modulated main data.

--7. (Amended) The recording method for a recording medium as claimed in claim 4, wherein said sub data are embedded in accordance with said modulation processing performed on said main data.

Ar --8. (Amended) The recording method for a recording medium as claimed in claim 1, wherein said main data have a header portion and data indicating said type of said recording medium is recorded in said header portion.

--9. (Amended) A recording medium on which main data are recorded so that said main data are readable as optical changes and on which sub data are recorded along with said main data, said sub data being embedded in at least a part of said main data based on a format corresponding to a type of the recording medium and said recording medium having an identification part indicating said type of said recording medium.

--10. (Amended) The recording medium as claimed in claim 9, wherein encryption processing is performed on text data of said main data that are then recorded and said sub data are data for decoding said encryption processing performed on said

text data of said main data.

--11. (Amended) The recording medium as claimed in claim 9, wherein said sub data are embedded based on a format corresponding to said type of said recording medium, at least a first format for a reproduction-only type recording medium and a second format for a recordable type recording medium.

A2 --12. (Amended) The recording medium as claimed in claim 11, wherein modulation processing is performed on said main data that are then recorded onto said recording medium and said sub data are embedded into margin bits of said modulation-processed main data.

--13. (Amended) The recording medium as claimed in claim 11, wherein modulation processing is performed on said main data that are then recorded onto said recording medium and said sub data are embedded into said main data so as to satisfy a connection condition due to said modulation processing performed on said main data.

--14. (Amended) The recording medium as claimed in claim 12, wherein said sub data are embedded into a predetermined pattern portion of said modulated main data.

--15. (Amended) The recording medium as claimed in claim 12, wherein said sub data are embedded in accordance with said

modulation processing performed on said main data.

--16. (Amended) The recording medium as claimed in claim 9, wherein said main data have a header portion and data indicating said type of said recording medium are recorded in said header portion.

--17. (Amended) A recording method for a recording medium, comprising the steps of:

recording data onto a recording medium so that said data are readable as optical changes; and

A₂ embedding and recording sub data into said data recorded in a predetermined recording area of said recording medium based on a format corresponding to a type of said recording medium.

--18. (Amended) The recording method for a recording medium as claimed in claim 17, wherein said recording medium has a first recording area in which said data are to be recorded and a second recording area that is provided at a position to be read prior to said first recording area and in which table-of-contents data are to be recorded; and said method further comprises the step of embedding said sub data into said data recorded in said second recording area.

--19. (Amended) The recording method for a recording medium as claimed in claim 18, wherein modulation processing

based on a predetermined modulation system is performed on said data to be recorded in said first recording area and said second recording area that are then recorded; and said sub data are embedded into margin bits of said data on which said modulation processing is performed.

--20. (Amended) The recording method for a recording medium as claimed in claim 19, wherein said margin bits are selected based on a format corresponding to said type of said recording medium.

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--21. (Amended) The recording method for a recording medium as claimed in claim 18, wherein modulation processing is performed on said main data that then recorded onto said recording medium; and said sub data are embedded into said data so as to satisfy a connection condition due to said modulation processing.

--22. (Amended) The recording method for a recording medium as claimed in claim 18, wherein said sub data are embedded into a synchronizing signal portion in said second recording area.

--23. (Amended) The recording method for a recording medium as claimed in claim 18, wherein said sub data are embedded into a sub code portion in said second recording area.

--24. (Amended) The recording method for a recording medium as claimed in claim 17, wherein encryption processing is performed on said data to be recorded onto said recording medium that are then recorded; and said sub data are data for decoding encryption processing performed on said data to be recorded onto said recording medium.

--25. (Amended) A recording method for a recording medium, comprising the step of:

identifying a type of a loaded recording medium;

A₂ selecting a data format for embedding sub data into data recorded on said loaded recording medium based on a result of said identification so that said data are readable as optical changes;

discriminating whether a recording area in which recording is to be performed is a recording area in which said sub data should be embedded; and

embedding and recording said sub data into data to be recorded in a predetermined area of said recording medium based on said selected data format when it is determined that said recording is to be performed in said recording area in which recording is to be performed based on a result of said discrimination.

--26. (Amended) The recording method for a recording medium as claimed in claim 25, wherein said recording medium has a first recording area in which said data are to be

recorded and a second recording area that is provided at a position to be read out prior to said first recording area and in which table-of-contents data are to be recorded; and said method further comprises the step of embedding said sub data into said data recorded in said second recording area.

A2 --27. (Amended) The recording method for a recording medium as claimed in claim 26, wherein modulation processing based on a predetermined modulation system is performed on said data to be recorded in said first recording area and said second recording area that are then recorded; and said sub data is embedded into margin bits of said data on which said modulation processing is performed.

--28. (Amended) The recording method for a recording medium as claimed in claim 27, wherein said margin bits are selected based on said result of said identification of said type of said recording medium.

--29. (Amended) The recording method for a recording medium as claimed in claim 27, wherein modulation processing is performed on said main data that are then recorded onto said recording medium; and said sub data are embedded into said data so as to satisfy a connection condition due to said modulation processing.

--30. (Amended) The recording method for a recording

medium as claimed in claim 28, wherein margin bits in accordance with said predetermined modulation system are selected when said result of said discrimination indicates that said area in which said recording is to be performed is not a recording area in which said sub data should be embedded.

--31. (Amended) The recording method for a recording medium as claimed in claim 26, wherein said sub data are embedded into a synchronizing signal portion in said second recording area.

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--32. (Amended) The recording method for a recording medium as claimed in claim 26, wherein said sub data are embedded into a sub code portion in said second recording area.

--33. (Amended) The recording method for a recording medium as claimed in claim 26, wherein encryption processing is performed on said data to be recorded in said first recording area that are then recorded; and said sub data are data for decoding encryption processing performed on said data to be recorded in said first recording area.

--34. (Amended) The recording method for a recording medium as claimed in claim 25, wherein said recording medium has an identification part indicating whether it is a

reproduction-only recording medium or a recordable recording medium; and said method further comprises the step of identifying said type of said loaded recording medium based on said identification part of said recording medium.

A2 --35. (Amended) The recording method for a recording medium as claimed in claim 34, wherein modulation processing based on a predetermined modulation system is performed on said data to be recorded in said first recording area and said second recording area that are then recorded; and said sub data are embedded into margin bits of said data on which said modulation processing is performed.

--36. (Amended) The recording method for a recording medium as claimed in claim 35, wherein said margin bits are selected based on said result of said identification of said type of said recording medium.

--37. (Amended) The recording method for a recording medium as claimed in claim 35, wherein modulation processing is performed on said main data that are then recorded onto said recording medium; and said sub data are embedded into said data so as to satisfy a connection condition due to said modulation processing.

--38. (Amended) The recording method for a recording medium as claimed in claim 34, wherein whether said recording

medium is one of a write-once recording medium and a rewritable recording medium is identified based on a reflectance of said recording medium; and said sub data are embedded by selecting said margin bits based on a result of said identification.

A2 --39. (Amended) The recording method for a recording medium as claimed in claim 34, wherein modulation processing is performed on said main data that are then recorded onto said recording medium; and said sub data are embedded into said data so as to satisfy a connection condition due to said modulation processing.

--40. (Amended) A recording device for a recording medium, comprising:

an encoding processing unit for performing recording modulation processing on inputted data and processing to embed sub data into said data based on a data format selected based on a type of a recording medium to be recorded; and

a head unit supplied with output data from said encoding unit and adapted for performing said recording on said recording medium.

--41. (Amended) The recording device for a recording medium as claimed in claim 40, further comprising an encryption processing unit for performing encryption processing on said inputted data and for supplying said data

to said encoding unit.

--42. (Amended) The recording device for a recording medium as claimed in claim 41, wherein said encoding processing unit has a modulation processing unit for performing modulation processing on output data from said encryption processing unit and causes said modulation processing unit to embed data for canceling said encryption processing performed on said output data from said encryption processing unit as said sub data.

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--43. (Amended) The recording device for a recording medium as claimed in claim 42, wherein said modulation processing unit embeds said sub data into margin bits of said data on which said modulation processing is performed.

--44. (Amended) The recording device for a recording medium as claimed in claim 43, wherein said modulation processing unit embeds said sub data by selecting said margin bits based on said type of said recording medium.

--45. (Amended) The recording device for a recording medium as claimed in claim 44, wherein said modulation processing unit selects said margin bits so as to satisfy a connection condition due to modulation processing performed on said output data from said encryption processing unit and embeds said sub data.

--46. (Amended) The recording device for a recording medium as claimed in claim 40, further comprising an identifying unit for identifying said type of a recording medium loaded on said device, wherein said encoding processing unit selects said data format and embeds said sub data into said data based on a result of identification by said identifying unit.

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--47. (Amended) The recording device for a recording medium as claimed in claim 46, wherein said encoding processing unit has a modulation processing unit for performing modulation processing on said output data from said encryption processing unit; and causes said modulation processing unit to embed data for canceling encryption processing performed on said output data from said encryption processing unit as said sub data.

--48. (Amended) The recording device for a recording medium as claimed in claim 47, wherein said modulation processing unit embeds said sub data into margin bits of said data on which said modulation processing is performed.

--49. (Amended) The recording device for a recording medium as claimed in claim 48, wherein said modulation processing unit embeds said sub data by selecting said margin bits based on said type of said recording medium.

--50. (Amended) The recording device for a recording medium as claimed in claim 47, wherein said modulation processing unit embeds said sub data so as to satisfy a connection condition due to modulation processing performed on said output data from said encryption processing unit.

--51. (Amended) A recording device for a recording medium, comprising:

A2 a head unit for recording data onto a recording medium so that said data are optically readable, the recording medium having a first recording area in which said data are to be recorded and a second recording area provided at a position to be read prior to said first recording area;

an encoding processing unit for performing recording modulation processing on inputted data and processing to embed sub data into said data based on a data format selected based on a type of said recording medium; and

a control unit for controlling said encoding processing unit and said head unit so as to record said data to be recorded in said second recording area with said sub data embedded in said data.

--52. (Amended) The recording device for a recording medium as claimed in claim 51, wherein said control unit discriminates whether said recording area on said recording medium in which recording is to be performed is said second recording area and when a result of said discrimination

indicates said second recording area said control unit controls said head unit to record said data with said sub data embedded into said second recording area.

A2 --53. (Amended) The recording device for a recording medium as claimed in claim 52, wherein said control unit discriminates whether said recording area on said recording medium in which recording is to be performed is said second recording area and when said result of said discrimination indicates said second recording area said control unit controls said head unit to record onto said recording medium said data on which modulation processing is performed by said encoding processing unit.

--54. (Amended) The recording device for a recording medium as claimed in claim 51, further comprising an identifying unit for identifying said type of said recording medium loaded on said device, wherein said encoding processing unit selects said data format and embeds said sub data into said data based on a result of said identification by said identifying unit.

--55. (Amended) The recording device for a recording medium as claimed in claim 54, wherein said encoding processing unit has a modulation processing unit for performing modulation processing on output data from said encryption processing unit; and causes said modulation

processing unit to embed data for canceling said encryption processing performed on said output data from said encryption processing unit as said sub data.

--56. (Amended) The recording device for a recording medium as claimed in claim 55, wherein said modulation processing unit embeds said sub data into margin bits of said data on which said modulation processing is performed.

A2 --57. (Amended) The recording device for a recording medium as claimed in claim 56, wherein said modulation processing unit embeds said sub data by selecting said margin bits based on said type of said recording medium.

--58. (Amended) The recording device for a recording medium as claimed in claim 55, wherein said modulation processing unit embeds said sub data so as to satisfy a connection condition due to modulation processing performed on said output data from said encryption processing unit.

--61. (Amended) A reproducing method for a recording medium, comprising the step of:

detecting an identification part indicating a type of a recording medium provided on a recording medium on which data are recorded so that said data is readable as optical changes and on which data indicating said type and having sub data embedded in at least a part of said data based on a data

format corresponding to said type of the recording medium are recorded;

discriminating said type of said recording medium based on said data indicating said type read from said recording medium;

detecting whether a result of said detection of said identification part and a result of said discrimination are coincident; and

extracting and decoding said sub data from said data read out from said recording medium when said result of said detection and said result of said discrimination are coincident.

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--62. (Amended) The reproducing method as claimed in claim 61, wherein when said result of said detection and said result of said discrimination are coincident decoding processing corresponding to said type of said recording medium based on said result of the detection of said identification part and the result of said discrimination is performed on said extracted sub data.

--63. (Amended) The reproducing method for a recording medium as claimed in claim 61, wherein encryption processing has been performed on said data to be recorded on said recording medium and said encryption processing performed on said data read from said recording medium is decrypted based on said decoded sub data.

--64. (Amended) The reproducing method for a recording medium as claimed in claim 63, wherein when the encryption processing performed on said data read from said recording medium could not be decrypted by using said decoded sub data a reproducing operation of said recording medium is stopped.

--65. (Amended) The reproducing method for a recording medium as claimed in claim 64, further comprising the step of making a warning display.

A2 --66. (Amended) The reproducing method for a recording medium as claimed in claim 61, wherein when said result of said detection of said identification part and said result of said discrimination are not coincident a reproducing operation of said recording medium is stopped.

--67. (Amended) The reproducing method for a recording medium as claimed in claim 66, further comprising the step of making a warning display.

--68. (Amended) A recording method for a recording medium, comprising the step of:

recording data onto a recording medium so that said data are readable as optical changes; and

embedding and recording sub data into data recorded in a predetermined recording area of said recording medium based on a format corresponding to a type of said data to be recorded

on said recording medium.

--69. (Amended) The recording method for a recording medium as claimed in claim 68, wherein said sub data varies between when said data to be recorded on said recording medium are original data and when said data to be recorded on said recording medium are non-original data.

Ar --70. (Amended) The recording method for a recording medium as claimed in claim 68, wherein said sub data have a data pattern that varies between when said data to be recorded on said recording medium are original data and when said data to be recorded on said recording medium are non-original data.

--71. (Amended) The recording method for a recording medium as claimed in claim 68, wherein after predetermined modulation processing is performed on said data to be recorded on said recording medium said data are recorded onto said recording medium and said sub data are embedded into margin bits of said data on which said predetermined modulation processing is performed.

--72. (Amended) The recording method for a recording medium as claimed in claim 71, wherein when said area on said recording medium in which recording is to be carried out is not said predetermined recording area in which said sub data should be embedded margin bits in accordance with said

predetermined modulation system are selected.

--73. (Amended) The recording method for a recording medium as claimed in claim 68, wherein said recording medium has a first recording area in which said data is to be recorded and a second recording area that is provided at a position to be read prior to said first recording area and in which table-of-contents data are to be recorded; and said method further comprises the step of embedding said sub data into said data recorded in said second recording area.

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--74. (Amended) The recording method for a recording medium as claimed in claim 73, wherein modulation processing based on a predetermined modulation system is performed on said data to be recorded in said first recording area and said second recording area that are then recorded; and said sub data are embedded into margin bits of said data on which said modulation processing is performed.

--75. (Amended) The recording method for a recording medium as claimed in claim 74, wherein said margin bits are selected based on a format corresponding to said type of said data to be recorded on said recording medium.

--76. (Amended) The recording method for a recording medium as claimed in claim 73, wherein modulation processing is performed on said main data that are then recorded onto

said recording medium; and said sub data are embedded into said data so as to satisfy a connection condition due to said modulation processing.

--77. (Amended) The recording method for a recording medium as claimed in claim 74, wherein said sub data are embedded into a synchronizing signal portion in said second recording area.

Ar --78. (Amended) The recording method for a recording medium as claimed in claim 74, wherein said sub data are embedded into a sub code portion in said second recording area.

--79. (Amended) The recording method for a recording medium as claimed in claim 68, wherein encryption processing is performed on said data to be recorded onto said recording medium that are then recorded; and said sub data are data for decoding encryption processing performed on said data to be recorded onto said recording medium.

--80. (Amended) The recording method for a recording medium as claimed in claim 68, further comprising the steps of: discriminating whether said data to be recorded on said recording medium are one of original data and non-original data; selecting a data format based on a result of said discrimination; and embedding said sub data based on said

selected data format.

--81. (Amended) A reproducing method for a recording medium, comprising the steps of:

discriminating a type of data recorded on a recording medium based on data indicating said type of data read from said recording medium on which said data is recorded so that said data are readable as optical changes and on which data are recorded having sub data embedded in at least a part of said data based on a data format corresponding to said type of the data recorded on said recording medium and indicating said type of said recorded data; and

decoding said sub data from said data read from said recording medium based on a result of said discrimination.

--82. (Amended) The reproducing method for a recording medium as claimed in claim 81, wherein encryption processing has been performed on said data to be recorded on said recording medium and said encryption processing performed on said data read from said recording medium is decrypted based on said decoded sub data.

--83. (Amended) The reproducing method for a recording medium as claimed in claim 82, wherein when said encryption processing performed on said data read out from said recording medium could not be decrypted by using said decoded sub data a reproducing operation of recording medium is stopped.